

SYSTEM AND METHOD FOR ADAPTIVELY ACCOMMODATING A HIGH AMPLITUDE DOWNSTREAM SIGNAL IN A DSL MODEM

ABSTRACT OF THE DISCLOSURE

A system and method are disclosed for adaptively accommodating a high amplitude downstream signal in a DSL modem. High amplitude downstream signals are common with local loop lengths of less than about 6,000 feet and can saturate DSL modem components and impair DSL service if not effectively accommodated.

In general, a DSL system detects a high amplitude downstream DSL signal and adjusts a DSL modem analog front end in response to the detected high amplitude downstream DSL signal so that analog front end components of a DSL modem are not saturated by the high amplitude downstream DSL signal. Pursuant to one embodiment, a digital signal processor detects the high amplitude DSL signal and, in response, decreases a gain of a first stage receiver to accommodate the high amplitude downstream DSL signal. Another embodiment introduces additional attenuation of the downstream DSL signal to attenuate high amplitude downstream DSL signals before they enter first stage receiver amplifier circuits.